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China: Unfavorable Harvest Prospects August 74

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# Intelligence Memorandum

*China: Unfavorable Harvest Prospects*

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# China: Unfavorable Harvest Prospects

As of July, China's 1974 grain crop appears unlikely to reach the record 250 million metric tons harvested in 1973. Even if the weather were unusually favorable for the rest of the year, the chances of output increasing as fast as population – by 2% or 5 million tons – are small.

Early-harvested grain crops – which normally account for 40% of China's grain output – were poor because of drought in the north and unseasonable frost in the south. Winter wheat output appears to have fallen short of the 1973 crop level despite a sizable expansion of acreage.

The late arrival and erratic behavior of the monsoons this spring, together with unusually low temperatures, has forced changes in acreage patterns that will adversely affect the fall-harvested crops that account for 60% of grain output. While good harvests of intermediate and late rice could be garnered if precipitation patterns return to normal, the harvest of coarse grains is unlikely to match the good crop of 1973.

The growth of grain output this year has been further constrained by a slowing of the growth of fertilizer supply to about 7% in 1974, compared with 16% in 1973.

China's grain imports are increasing. Contracts for delivery of 9.6 million tons of grain in FY 1975 – 20% more than in fiscal year (FY) 1974 – have already been signed, and more purchases are expected. The US share of these purchases now stands at 2.8 million tons for FY 1975, down from the 4.8 million ton level of FY 1974. The decline is the result of China's dissatisfaction with US corn and of a deliberate policy of diversifying sources of supply.

The leadership has embarked on a long-term program to free China of its dependence on imported grain and chemical fertilizers. This program is built around 13 recently purchased large urea fertilizer complexes, which will not begin to pay off until near the end of the decade. In the interim, Chinese agricultural production will remain highly sensitive to changes in weather conditions. China's dependence on grain imports to maintain urban food consumption standards will remain high and may increase.

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Note: Comments and queries regarding this memorandum are welcomed. They may be directed to [redacted] of the Office of Economic Research, Code 143, [redacted] 25X1A

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## DISCUSSION

### Introduction

1. Generally unfavorable weather since late 1973 has dimmed Chinese hopes for a bumper 1974 harvest. This memorandum reviews weather conditions and other factors affecting this year's agricultural production, discusses current grain import policy, and briefly assesses the short-term prospects for agricultural output and grain imports.

### Acreage Policy

2. China's grain output in 1973 reached a record level of 250 million metric tons. This was 6% higher than the depressed 1972 crop, but only 1-1/2% above the previous record year of 1971. Because population had grown 4% in the interim, per capita grain production was still down, and large grain imports were still needed. Consequently, the PRC gave a high priority to increasing grain production in 1974.

3. The acreage of winter (summer-harvested) grain was expanded in the fall of 1973, a normal practice following a less-than-satisfactory harvest. The increase was unusually large in parts of south China, where winter crops are not normally important. Kwangtung Province, for example, tripled winter plantings.

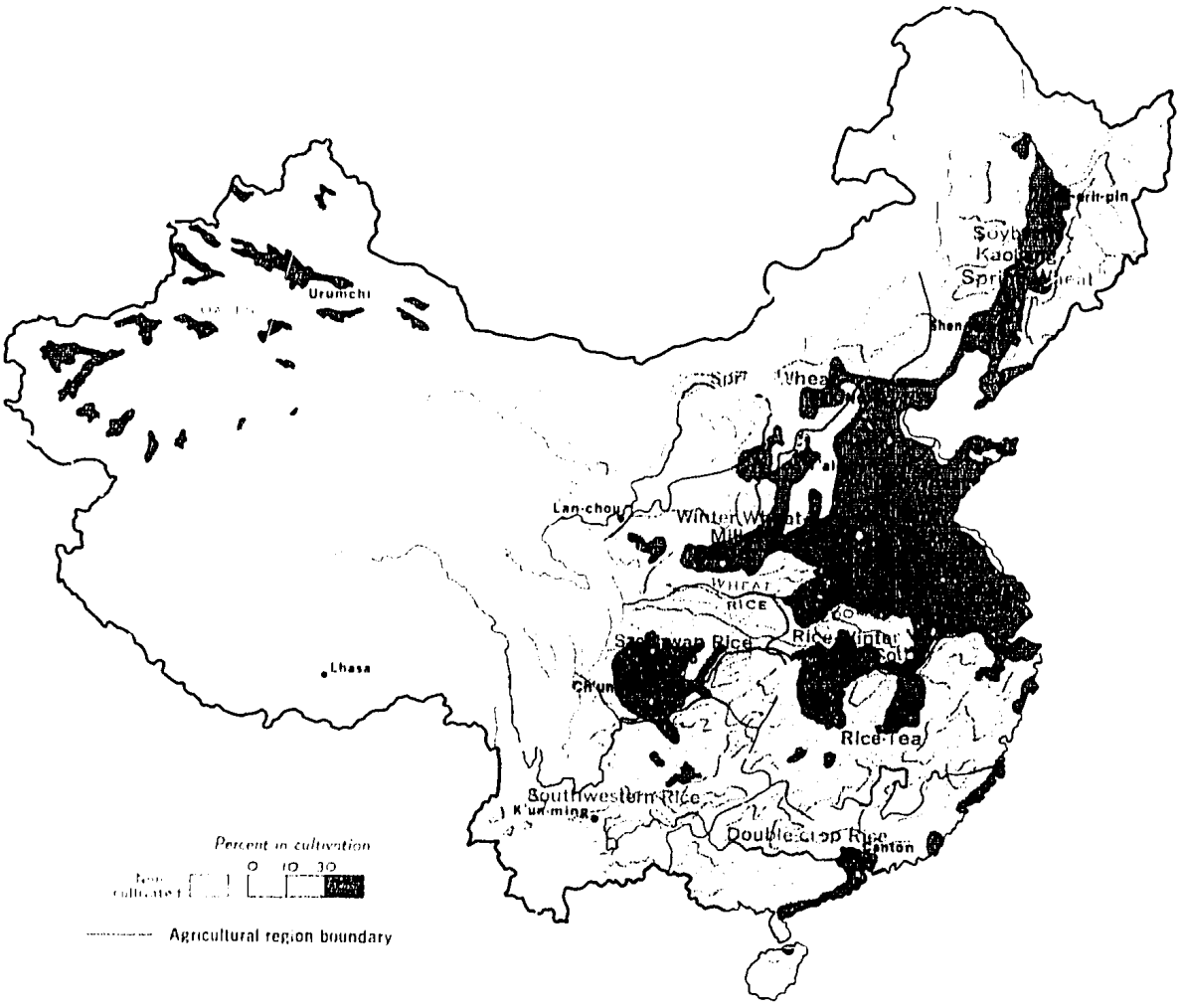
4. This past spring, peasants were encouraged to grow more fast-maturing spring-sown grains, such as spring wheat, barley, and peas, even at the expense of nongrain crops. Peking also was concerned that the peasants were spending too much time on their private plots and part-time handicraft production and not enough time in the socialist sector.

### Weather Conditions

5. Crops in virtually all of the major agricultural regions of China (see the map) have been set back by unfavorable weather. The planting and germination of winter grains was hindered by prolonged rainfall and overcast skies during the peak of the planting season, September through mid-November. Then the weather turned from too wet to too dry for winter crops. The winter and spring of 1973-74 was the driest in recent years. The greater part of the Yellow and Huai River Valleys, China's winter wheat belt, had little or no precipitation. In all, 13 of the 15 provinces growing sizable acreages of winter crops suffered from drought.

6. Weather conditions were only slightly improved for spring sowing. In south China the spring was unusually late and dry. Rainfall was sporadic from April through mid-July and was far less than average in most regions.

# Agriculture

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7. Precipitation in early and mid-May, which was well above normal over China's winter wheat belt, had a mixed impact. Wheat crops approaching maturity were damaged, but the moisture was a boost for the planting of fall-harvested coarse grains (corn, millet, and sorghum).

## Other Factors Affecting Crops

8. Fertilizer supplies have not kept up with the demand created by the expansion of double cropping. The growth of domestic production has slowed, and deliveries from Japan, China's major source of imported fertilizer, have been cut back. Total supply of chemical fertilizer (domestic production plus imports), which rose by 16% in 1973 over 1972, is expected to increase by only 7% in 1974, to 34.4 million tons.

9. More important was a severe seasonal shortage of labor. The unusually large acreage of winter crops to be harvested in the spring and early summer and the delay in spring sowing caused by late frosts resulted in an overlapping of these crucial farming operations. In several provinces, there was not enough labor for the timely accomplishment of both tasks. Provincial press reports have complained that the harvesting of winter crops was somewhat shoddy. Moreover, the sowing of some fields was late, which will tend to lower yields, and some fields had to be resown with lower-yielding catch crops.[1]

## Crop Yields and Production

### *Early Harvest*[2]

10. Early-harvested grain crops were poor. Wet weather in the fall of 1973 prevented fall sowing of some acreage and resulted in poor crop stands on much of the acreage that was planted. Most of the wheat area cannot be irrigated, and the dry spring and summer set the crop back even further on nonirrigated areas. Sporadic rainfall in May over parts of north China was too late to boost yields and may have reduced them because of shattering and lodging.

11. Winter wheat output appears to have fallen short of the poor 1973 crop despite the sizable expansion of acreage. As shown in the tabulation below, five

1. Catch crops are rapidly maturing crops sown as replacements for higher-yielding primary crops that have failed.

2. The Chinese grain harvest consists of an early and a late (autumn) harvest. The early harvest consists of (a) spring and summer grains (winter crops include winter wheat, barley, rye, pulses and sweet potatoes, and fast-maturing catch crops sown in the early spring and harvested in the early to mid-summer), and (b) early rice. The summer grains and early rice each account for about 20% of China's production of grain. The late harvest, consisting primarily of intermediate and late rice and coarse grains (corn, millet, and sorghum) is the more important, providing about 60% of the total annual output of grain.

| Province | Change in Acreage | Change in Output |
|---|---|---|
| Hopeh | +14% | no report |
| Honan | +3.2% | record harvest |
| Shantung | no report | "relatively good" harvest |
| Shansi | no report | no report |
| Kiangsu | "higher than" 1973 | +10% same period 1973 |
| Anhwei | +4.7% | no report |
| Hupeh | "higher than" 1973 | "fairly good" harvest |
| Szechwan | no report | +10% |

provinces reported significant increases in acreage this year, but by late July only two of those had claimed or implied that output was up. Of the two, only Honan Province has categorized its 1974 wheat harvest as a "record" crop.

12. The acreage of early rice this year is almost certainly down from last year. Unseasonable frost reportedly caused up to 30-day delays in the transplanting of early rice in some areas. The unusually large acreage and delayed harvesting of winter crops necessitated some cutback in early rice acreage. Because of the dry spring, catch crops were sown in place of early rice in some areas. Among the major growing provinces, only Kiangsi claimed that early rice was transplanted on a larger area than last year. The crop has been hard hit by low temperature and dry weather in Kwangtung, by far the largest producer of early rice.

*Fall Harvest*

13. The size of the fall harvest will be largely determined by weather conditions over the remainder of the growing season. Good crops could be harvested if precipitation patterns return to normal. In the case of rice, transplanting was delayed by the late harvesting of the preceding crop. Because of the delay, yield will be lower and the crop will be vulnerable to frost late in the growing season. Coarse grains will fall short of the exceptional 1973 crop because of poor weather conditions thus far in the growing season.

14. At this juncture, only an extraordinarily good fall harvest is likely to counterbalance the setbacks suffered by the early harvest. In sum, grain output in 1974 is likely to fall short of the 1973 harvest of 250 million tons.

**Impact on Imports**

15. Since China first began importing grain in 1961, imports have been used to feed the cities of north China. Thus, each successive below-normal harvest of winter wheat and coarse grain in north China has increased the PRC's reliance on imported grain. As shown in the table, imports have skyrocketed. For FY 1975 the PRC has already contracted for 9.6 million tons of grain, and still more purchases are expected. China imported 8.0 million tons in FY 1974 and 6.2 million tons in FY 1973.

People's Republic of China: Imports of Grain[1]

Thousand Metric Tons

| | 1961 | 1962 | 1963 | 1964 | 1965 | 1966 | 1967 |
|---|---|---|---|---|---|---|---|
| **Jan-Dec** | **5,476** | **5,004** | **5,489** | **6,605** | **5,912** | **5,585** | **4,133** |
| Canada | 2,264 | 2,009 | 1,483 | 2,075 | 1,600 | 2,568 | 1,084 |
| Australia | 2,574 | 1,229 | 3,002 | 2,225 | 2,800 | 1,307 | 2,859 |
| Argentina | 371 | 525 | 35 | 1,409 | 1,500 | 1,600 | 100 |
| France | 257 | 284 | 814 | 225 | .... | 110 | .... |
| Other | 10 | 957 | 155 | 671 | 12 | .... | 90 |
| United States | .... | .... | .... | .... | .... | .... | .... |
| **Jan-Jun** | **2,650** | **3,170** | **3,591** | **3,901** | **2,762** | **3,073** | **2,591** |
| Canada | 1,134 | 1,374 | 1,053 | 877 | 800 | 970 | 877 |
| Australia | 1,449 | 1,013 | 1,771 | 1,395 | 1,500 | 693 | 1,524 |
| Argentina | 30 | 234 | .... | 1,127 | 450 | 1,300 | 100 |
| France | 27 | .... | 626 | 128 | .... | 110 | .... |
| Other | 10 | 549 | 141 | 374 | 12 | .... | 90 |
| United States | .... | .... | .... | .... | .... | .... | .... |
| **Jul-Dec** | **2,826** | **1,834** | **1,898** | **2,704** | **3,150** | **2,512** | **1,542** |
| Canada | 1,130 | 635 | 430 | 1,198 | 800 | 1,598 | 207 |
| Australia | 1,125 | 216 | 1,231 | 830 | 1,300 | 614 | 1,335 |
| Argentina | 341 | 291 | 35 | 282 | 1,050 | 300 | .... |
| France | 230 | 284 | 188 | 97 | .... | .... | .... |
| Other | .... | 408 | 14 | 297 | .... | .... | .... |
| United States | .... | .... | .... | .... | .... | .... | .... |

| | 1968 | 1969 | 1970 | 1971 | 1972 | 1973 | 1974[2] |
|---|---|---|---|---|---|---|---|
| **Jan-Dec** | **4,364** | **3,908** | **4,632** | **3,026** | **4,844** | **7,679** | **9,087** |
| Canada | 2,173 | 1,729 | 1,967 | 3,013 | 3,882 | 2,544 | 3,073 |
| Australia | 1,591 | 1,848 | 2,218 | 13 | .... | 800 | 1,300 |
| Argentina | .... | .... | .... | .... | .... | 153 | 921 |
| France | 600 | 331 | 447 | .... | .... | .... | 210 |
| Other | .... | .... | .... | .... | .... | .... | .... |
| United States | .... | .... | .... | .... | 962 | 4,182 | 3,583 |
| **Jan-Jun** | **2,800** | **1,692** | **2,317** | **1,578** | **1,517** | **2,872** | **3,200** |
| Canada | 1,162 | 1,085 | 1,186 | 1,565 | 1,517 | 2,009 | 1,073 |
| Australia | 1,038 | 607 | 1,131 | 13 | .... | 324 | 740 |
| Argentina | .... | .... | .... | .... | .... | 62 | 251 |
| France | 600 | .... | .... | .... | .... | .... | .... |
| Other | .... | .... | .... | .... | .... | .... | .... |
| United States | .... | .... | .... | .... | .... | 477 | 1,136 |
| **Jul-Dec** | **1,564** | **2,216** | **2,315** | **1,448** | **3,327** | **4,807** | **5,887** |
| Canada | 1,011 | 644 | 781 | 1,448 | 2,365 | 535 | 2,000 |
| Australia | 553 | 1,241 | 1,087 | .... | .... | 476 | 560 |
| Argentina | .... | .... | .... | .... | .... | 91 | 670 |
| France | .... | 331 | 447 | .... | .... | .... | 210 |
| Other | .... | .... | .... | .... | .... | .... | .... |
| United States | .... | .... | .... | .... | 962 | 3,705 | 2,447 |

1. Calendar years.
2. Projected.

16. Grain purchases from the United States, which totaled 4.8 million tons in FY 1974, will decline in FY 1975. Thus far, only 2.8 million tons of US grain have been purchased for July 1974 - June 1975 delivery. The relative decline in the US share of the Chinese market is attributable to China's dissatisfaction with US corn and the Chinese policy of diversifying sources of supply. Cargoes of US corn were found to heat excessively during the hot summer months, lowering the quality of the corn for human consumption. China is not expected to re-enter the market for US corn.

17. In the past year, Peking has concluded three-year agreements with Canada, Australia, and Argentina to provide more than 4 million tons of grain annually through 1976. The United States has been established as the key supplier to furnish extra quantities in case other suppliers cannot accommodate all of China's needs. More purchases of US wheat are likely in FY 1975. China has already purchased about 2.6 million tons of US wheat for delivery in FY 1975, down slightly from the 3.1 million tons imported in FY 1974.

18. Should the PRC import grain for south China, its total grain imports will exceed the 9.6 million tons now contracted for FY 1975. This year, rice supplies are reported to be unusually tight in Kwangtung Province and a number of other areas of south China. Normally an exporter of rice, China withdrew from the market last winter and this year reportedly tried to buy small quantities of rice on at least two occasions.

**Prospects**

19. Despite a decade of efforts to provide conditions for a sustained growth in grain production, the PRC has been able to provide adequate food supplies for its growing population only through imports of both fertilizer and grain. Perhaps the best evidence for the case that the PRC does not expect to become self-supporting over the next few years is the regime's decision to conclude three-year agreements with Canada, Australia, and Argentina.

20. The leadership has embarked on a long-term agricultural improvement program to free China of the necessity of importing grain and chemical fertilizers. Peking contracted for 13 large urea plants from Japanese, West European, and US sources at a total cost of $500 million. Output from these plants, if expeditiously supplemented by improved water control facilities and increased supplies of other types of fertilizer, gives the potential for substantially higher agricultural production by 1980.[3]

3. For a detailed assessment of this program, see CIA ER IR 74-17, *China: Implications of Urea Plant Purchases*, July 1974, SECRET NO FOREIGN DISSEM.